1600

RAW SEQUENCE LISTING DATE: 05/09/2003
PATENT APPLICATION: US/09/825,769A TIME: 12:39:25

Input Set : A:\38777054.app
Output Set: N:\CRF4\05092003\I825769A.raw

<110> APPLICANT: BLAKE, MILAN S.
BOGDAN JR., JOHN A.
NAZARIO-LARRIEU, JAVIER
<120> TITLE OF INVENTION: METHOD FOR THE PRODUCTION OF BACTERIAL TOXINS
<130> FILE REFERENCE: 38777-0054
<140> CURRENT APPLICATION NUMBER: 09/825,769A
<141> CURRENT FILING DATE: 2001-04-04
<150> PRIOR APPLICATION NUMBER: 60/194,478
<151> PRIOR FILING DATE: 2000-04-04
<160> NUMBER OF SEQ ID NOS: 12
<170> SOFTWARE: PatentIn Ver. 2.1
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<211> LENGTH: 10
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic oligonucleotide
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<212> TYPE: DNA
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<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic oligonucleotide
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<213> ORGANISM: Artificial Sequence
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<210> SEQ ID NO: 4
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<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
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68 cactatttgg tcggtcgg                                                  18
71 <210> SEQ ID NO: 5
72 <211> LENGTH: 19
73 <212> TYPE: PRT
74 <213> ORGANISM: Artificial Sequence
76 <220> FEATURE:
77 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
78       peptide
80 <400> SEQUENCE: 5
81 Gly Gly Gly Asp Gly Ser Phe Ser Gly Phe Gly Asp Gly Ser Phe Ser
82   1               5                  10                  15
84 Gly Phe Gly
87 <210> SEQ ID NO: 6
88 <211> LENGTH: 403
89 <212> TYPE: PRT
90 <213> ORGANISM: Bordetella pertussis
92 <400> SEQUENCE: 6
93 Met Ser Asn Arg Pro Ile Tyr Leu Asp Tyr Ser Ala Thr Thr Pro Val
94   1               5                  10                  15
96 Asp Pro Ser Val Val Glu Lys Met Ile Pro Trp Leu Tyr Glu Ser Phe
97              20                  25                  30
99 Gly Asn Pro Ala Ser Arg Ser His Arg Phe Gly Trp Glu Ala Glu Asp
100         35                  40                  45
102 Ala Val Glu Lys Ala Arg Glu Glu Val Ala Lys Leu Val Asn Ala Asp
103      50                  55                  60
105 Pro Arg Glu Ile Val Trp Thr Ser Gly Ala Thr Glu Ser Asp Asn Leu
106  65                  70                  75                  80
108 Ala Ile Lys Gly Ala Ala Asn Phe Tyr Ala Glu Arg Gly Lys His Ile
109                 85                  90                  95
111 Ile Thr Val Lys Thr Glu His Lys Ala Val Leu Asp Thr Cys Arg Glu
112             100                 105                 110
114 Leu Glu Arg Gln Gly Phe Glu Val Thr Tyr Leu Asp Val Gln Asp Asp
115         115                 120                 125
117 Gly Leu Leu Ser Leu Asp Ala Phe Lys Ala Ala Leu Arg Pro Asp Thr
118     130                 135                 140
120 Ile Leu Val Ser Val Met Met Val Asn Asn Glu Ile Gly Val Ile Gln
121 145                 150                 155                 160
123 Asp Ile Ala Ala Leu Gly Glu Ile Cys Arg Glu Lys Gly Ile Ile Phe
124                 165                 170                 175
126 His Val Asp Ala Ala Gln Ala Thr Gly Lys Val Glu Ile Asp Leu Gln
127             180                 185                 190
129 Lys Leu Lys Val Asp Leu Met Ser Phe Ser Ala His Lys Thr Tyr Gly
130         195                 200                 205
132 Pro Lys Gly Ile Gly Ala Leu Tyr Val Arg Arg Lys Pro Arg Val Arg
133     210                 215                 220
135 Ile Glu Ala Gln Met His Gly Gly Gly His Glu Arg Gly Phe Arg Ser
136 225                 230                 235                 240
138 Gly Thr Leu Ala Thr His Gln Ile Val Gly Met Gly Glu Ala Phe Arg
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```
139                 245                 250                 255
141 Leu Ala Arg Glu Glu Met Gly Thr Glu Asn Glu Arg Val Arg Met Leu
142             260                 265                 270
144 Arg Asp Arg Leu Leu Ala Gly Leu Thr Gln Ile Glu Glu Val Tyr Val
145         275                 280                 285
147 Asn Gly Ser His Glu His Arg Val Pro His Asn Leu Asn Ile Ser Phe
148     290                 295                 300
150 Asn Tyr Val Glu Gly Glu Ser Leu Ile Met Ala Ile Lys Glu Leu Ala
151 305                 310                 315                 320
153 Val Ser Ser Gly Ser Ala Cys Thr Ser Ala Ser Leu Glu Pro Ser Tyr
154                 325                 330                 335
156 Val Leu Arg Ala Leu Gly Arg Asn Asp Glu Leu Ala His Ser Ser Ile
157             340                 345                 350
159 Arg Phe Thr Leu Gly Arg Phe Thr Thr Glu Gln Glu Ile Asp Phe Thr
160         355                 360                 365
162 Ile Glu Leu Ile Lys Ser Arg Val Gly Lys Leu Arg Asp Met Ser Pro
163     370                 375                 380
165 Leu Trp Glu Met Ala Gln Glu Gly Ile Asp Leu Asn Ser Val Gln Trp
166 385                 390                 395                 400
168 Ala Ala His
171 <210> SEQ ID NO: 7
172 <211> LENGTH: 403
173 <212> TYPE: PRT
174 <213> ORGANISM: Bordetella pertussis
176 <400> SEQUENCE: 7
177 Met Ser Asn Arg Pro Ile Tyr Leu Asp Tyr Ser Ala Thr Thr Pro Val
178   1               5                  10                  15
180 Asp Pro Ser Val Val Glu Lys Met Ile Pro Trp Leu Tyr Glu Ser Phe
181             20                  25                  30
183 Gly Asn Pro Ala Ser Arg Ser His Arg Phe Gly Trp Glu Ala Glu Asp
184          35                  40                  45
186 Ala Val Glu Lys Ala Arg Glu Glu Val Ala Lys Leu Val Asn Ala Asp
187      50                  55                  60
189 Pro Arg Glu Ile Val Trp Thr Ser Gly Ala Thr Glu Ser Asp Asn Leu
190  65                  70                  75                  80
192 Ala Ile Lys Gly Ala Ala Asn Phe Tyr Ala Glu Arg Gly Lys His Ile
193                 85                  90                  95
195 Ile Thr Val Lys Thr Glu His Lys Ala Val Leu Asp Thr°Cys Arg Glu
196             100                 105                 110
198 Leu Glu Arg Gln Gly Phe Glu Val Thr Tyr Leu Asp Val Gln Asp Asp
199         115                 120                 125
201 Gly Leu Leu Ser Leu Asp Ala Phe Lys Ala Ala Leu Arg Pro Asp Thr
202     130                 135                 140
204 Ile Leu Val Ser Val Met Met Val Asn Asn Glu Ile Gly Val Ile Gln
205 145                 150                 155                 160
207 Asp Ile Ala Ala Leu Gly Glu Ile Cys Arg Glu Lys Gly Ile Ile Phe
208                 165                 170                 175
210 His Val Asp Ala Ala Gln Ala Thr Gly Lys Val Glu Ile Asp Leu Gln
211             180                 185                 190
```

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```
213 Lys Leu Lys Val Asp Leu Met Ser Phe Ser Ala His Lys Thr Tyr Gly
214         195                 200                 205
216 Pro Lys Gly Ile Gly Ala Leu Tyr Val Arg Arg Lys Pro Arg Val Arg
217     210                 215                 220
219 Ile Glu Ala Gln Met His Gly Gly Gly His Glu Arg Gly Phe Arg Ser
220 225                 230                 235                 240
222 Gly Thr Leu Ala Thr His Gln Ile Val Gly Met Gly Glu Ala Phe Arg
223                 245                 250                 255
225 Leu Ala Arg Glu Glu Met Gly Thr Glu Asn Glu Arg Val Arg Met Leu
226             260                 265                 270
228 Arg Asp Arg Leu Leu Ala Gly Leu Thr Gln Ile Glu Glu Val Tyr Val
229         275                 280                 285
231 Asn Gly Ser His Glu His Arg Val Pro His Asn Leu Asn Ile Ser Phe
232     290                 295                 300
234 Asn Tyr Val Glu Gly Glu Ser Leu Ile Met Ala Ile Lys Glu Leu Ala
235 305                 310                 315                 320
237 Val Ser Ser Gly Ser Ala Cys Thr Ser Ala Ser Leu Glu Pro Ser Tyr
238                 325                 330                 335
240 Val Leu Arg Ala Leu Gly Arg Asn Asp Glu Leu Ala His Ser Ser Ile
241             340                 345                 350
243 Arg Phe Thr Leu Gly Arg Phe Thr Thr Glu Gln Glu Ile Asp Phe Thr
244         355                 360                 365
246 Ile Glu Leu Ile Lys Ser Arg Val Gly Lys Leu Arg Asp Met Ser Pro
247     370                 375                 380
249 Leu Trp Glu Met Ala Gln Glu Gly Ile Asp Leu Asn Ser Val Gln Trp
250 385                 390                 395                 400
252 Ala Ala His
255 <210> SEQ ID NO: 8
256 <211> LENGTH: 1212
257 <212> TYPE: DNA
258 <213> ORGANISM: Bordetella pertussis
260 <400> SEQUENCE: 8
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262 gtcgagaaaa tgattccctg gttgtacgag agtttcggca atccggcctc gcgcagccac 120
263 gcctttggct gggaagccga ggacgcggtc gagaaggccc gcgaggaagt tgccaagctg 180
264 gtcaacgccg atccgcgcga gatcgtctgg acttccggcg ctaccgagtc ggacaacctg 240
265 gccatcaagg gcgcggcgaa tttctacgcc gagcgcggca agcacatcat taccgtcaag 300
266 accgaacaca aggcggtgct ggatacctgt cgggagctcg aacgccaggg ctttgaagtg 360
267 acctacctgg atgtccagga cgatggtctg ctcagcctcg atgcgttcaa ggctgcgctg 420
268 cgcccggata ccatcctggt gtcggtgatg atggtcaaca acgagatcgg cgtcatccag 480
269 gacatcgccg cgctgggcga gatctgccgc gagaagggca tcatcttcca cgtggacgcg 540
270 gcccaggcca ccggcaaggt cgagatcgac ctgcagaagc tgaaggtgga cctgatgtcg 600
271 ttctcggcgc acaagacgta cggccccaag ggcatcggcg cgctgtatgt gcggcgcaag 660
272 ccgcgcgtgc gcatcgaggc gcagatgcac ggcggcggcc acgaacgggg cttccggtcg 720
273 ggcacgctgg ccacgcacca gatcgtcggc atgggcgagg cgttccgcct ggcgcgcgag 780
274 gaaatgggca ccgagaacga gcgcgtgcgc atgctgcgcg accgcctgct ggccggcctg 840
275 acgcagatcg aggaagtgta tgtgaacggc agcatggagc accgcgtgcc gcacaacctg 900
276 aacatcagct tcaactatgt cgagggcgag tctctgatca tggcgatcaa ggagctggcc 960
277 gtttccagcg gttcggcctg cacgtcggcc agcctggagc cgtcctatgt gctgcgcgcg 1020
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PATENT APPLICATION: US/09/825,769A TIME: 12:39:25

Input Set : A:\38777054.app
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278 ctgggccgca acgacgagct ggcgcacagc tccatccgct ttaccctggg ccgcttcacg 1080
279 accgaacagg aaatcgactt cacgatcgaa ctgatcaaga gtcgtgtcgg caagctgcgc 1140
280 gatatgtcgc cgttgtggga aatggcccag gaaggcattg atctgaattc cgtgcagtgg 1200
281 gccgcgcact ga 1212
284 <210> SEQ ID NO: 9
285 <211> LENGTH: 565
286 <212> TYPE: DNA
287 <213> ORGANISM: Bordetella pertussis
289 <400> SEQUENCE: 9
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291 gtcgagaaaa tgattccctg gttgtacgag agtttcggca atccggcctc gcgcagccac 120
292 gcctttggct gggaagccga ggacgcggtc gagaaggccc gcgaggaagt tgccaagctg 180
293 gtcaacgccg atccgcgcga gatcgtctgg acttccggcg ctaccgagtc ggacaacctg 240
294 gccatcaagg gcgcggcgaa tttctacgcc gagcgcggca agcacatcat taccgtcaag 300
295 accgaacaca aggcggtgct ggatacctgt cgggagctcg aacgccaggg ctttgaagtg 360
296 acctacctgg atgtccagga cgatggtctg ctcagcctcg atgcgttcaa ggctgcgctg 420
297 cgcccggata ccatcctggt gtcggtgatg atggtcaaca acgagatcgg cgtcatccag 480
298 gacatcgccg cgctgggcga gatctgccgc gagaagggca catcttccac gtggacgcgg 540
299 ccaagccaac ggcaaggtcg agatc 565
302 <210> SEQ ID NO: 10
303 <211> LENGTH: 560
304 <212> TYPE: DNA
305 <213> ORGANISM: Bordetella pertussis
307 <220> FEATURE:
308 <221> NAME/KEY: modified_base
309 <222> LOCATION: (18)
310 <223> OTHER INFORMATION: a, t, c, g, other or unknown
312 <220> FEATURE:
313 <221> NAME/KEY: modified_base
314 <222> LOCATION: (20)
315 <223> OTHER INFORMATION: a, t, c, g, other or unknown
317 <220> FEATURE:
318 <221> NAME/KEY: modified_base
319 <222> LOCATION: (75)
320 <223> OTHER INFORMATION: a, t, c, g, other or unknown
322 <220> FEATURE:
323 <221> NAME/KEY: modified_base
324 <222> LOCATION: (338)
325 <223> OTHER INFORMATION: a, t, c, g, other or unknown
327 <400> SEQUENCE: 10
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329 tccggtcggg cacgntggcc acgcaccaga tcgtcggcat gggcgaggcg ttccgcctgg 120
330 cgcgcgagga aatgggcacc gagaacgagc gcgtgcgcat gctgcgcgac cgcctgctgg 180
331 ccggcctgac gcagatcgag gaagtgtatg tgaacggcag catggagcac cgcgtgccgc 240
332 acaacctgaa catcagcttc aactatgtcg agggcgagtc tctgatcatg gcgatcaagg 300
333 agctggccgt ttccagcggt tcggcctgca cgtcggcnag cctggagccg tcctatgtgc 360
334 tgcgcgcgct gggccgcaac gacgagctgg cgcacagctc catccgcttt accctgggcc 420
335 gcttcacgac cgaacaggaa atcgacttca cgatcgaact gatcaagagt cgtgtcggca 480
336 agctgcgcga tatgtcgccg ttgtgggaaa tggcccagga aggcattgat ctgaattccg 540

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 05/09/2003
PATENT APPLICATION: **US/09/825,769A** TIME: 12:39:26

Input Set : **A:\38777054.app**
Output Set: **N:\CRF4\05092003\I825769A.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:10; N Pos. 18,20,75,338
Seq#:12; N Pos. 247

VERIFICATION SUMMARY DATE: 05/09/2003
PATENT APPLICATION: **US/09/825,769A** TIME: 12:39:26

Input Set : **A:\38777054.app**
Output Set: **N:\CRF4\05092003\I825769A.raw**

L:328 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
M:341 Repeated in SeqNo=10
L:371 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:240